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Learning during lockdown: How socially interactive were secondary school students in England?

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Abstract:
For countless students, national lockdowns in 2020 and 2021 caused serious upheaval in their education. Across England, decisions to close schools engendered much anxiety, as did Government expectations that most students continued their schooling from home. In addition to lost opportunities for learning and even loss of learning, students' wellbeing was a significant concern for parents, teachers, and other stakeholders.

Students' social interactions with their teachers, each other, family and friends are critical to both pedagogy and wellbeing. We report on a survey of over 600 secondary school students' perceptions of the extent and nature of such interactions during England's national lockdown in early 2021. We found that the activity types that occurred both within and outside of lockdown schooling changed markedly compared with during pre-pandemic schooling. Students reported spending less time interacting with their teachers and peers though whole class work, small group work, and pair work, and more time working independently. Over half of the students surveyed perceived working independently to be helpful or really helpful, apparently valuing the autonomy they had gained. Patterns of activity types for students who learned mostly or entirely at home were strikingly like those of students who continued to attend school during lockdown; the nature of face-to-face schooling appeared to have changed temporarily in the direction of remote schooling.

Learning during lockdown: How socially interactive were secondary school students in England?

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Introduction

In England, one of the Government's responses to the COVID-19 pandemic, alongside broader national restrictions, was for schools (both state and independent) to be closed to all but the children of key workers and a small number of other children identified as vulnerable. The working population was also expected to work from home if they were able to. This situation came to be known colloquially as "lockdown". There were two separate school lockdowns, the first starting in March 2020 and a second in January 2021. During the second lockdown in particular, schools were expected to make proactive provision for student learning to continue (Montacute & Cullinane, 2021; Williamson, 2021; Leahy et al., 2021), and the emphasis for many was moved to independent learning and home schooling.

For many students, the closing of schools caused serious upheaval in their studies. The advent of widespread schooling at home is commonly believed to have placed great burdens on individual students who often had to take much more responsibility for their own learning than they had done previously. There was a much greater reliance on technology, broadband internet access and the presence and availability of appropriate devices (laptops, tablets and phones). There was the problem that these resources were often shared with other members of the family, including, potentially, parents working from home. Many students were also impacted by repeated periods of self-isolation from anyone outside their own household, due to close contact with confirmed COVID-19 cases (often within school), particularly in the periods of time between and following the national lockdowns.

In an attempt to find out more about the experiences of secondary school students and their teachers during the lockdown period in early 2021, and to compare these experiences with those during their subsequent return to school, we conducted research investigating behaviours and attitudes during

this extraordinary time. In this article, we report on the data we collected from students on their social interactions. Our study of teachers' wellbeing is reported separately (Jellis et al., this issue).

What do we know about student experiences during lockdown?

The unprecedented nature and size of the pandemic meant that most governments had extremely difficult decisions to make, in an unusually short timescale. The United Kingdom (UK) Government's decision to close schools in England in 2020 and 2021, and to expect most students to continue their education from their homes with as much support as could reasonably be put in place by their school, caused a great deal of concern[1] (e.g., Andrew et al., 2020). There was speculation as to how the lockdowns would affect the education and ultimately the life chances of school students, particularly those who were close to taking their GCSE or A Level examinations. In addition, teachers were placed in a position where they were required to plan, deliver their lessons, and mark work in ways that were unfamiliar to them. Again, there were concerns about the quality of teaching and marking under these conditions (Howard et al., 2021, pp.60–61). Consequently, a number of research projects were commissioned, both nationally and internationally, to discover and evaluate any learning loss, or lost opportunities for learning and therefore loss of learning progress, that would potentially occur.

An early study in Norway (Bubb & Jones, 2020) concluded that, although working remotely had put greater pressures on students and teachers, it also provided opportunities not previously apparent. Pupils reported on the autonomy they had gained and that it allowed them to make more decisions for themselves as to when and how to do things. Teachers too, reported pedagogical benefits, including the ability to spread their attention equally among their students rather than tending more to the most demanding. In England, recently published reviews have emphasised that student experiences of learning during lockdown were highly diverse (Leahy et al., 2021; Howard et al., 2021). During the first national lockdown, research confirmed that socio-economically disadvantaged students were spending far less time learning than less disadvantaged peers (Leahy et al., 2021), and were less likely to be learning through live online lessons. Comparatively, little research has been carried out into teaching and learning during the second national lockdown specifically (Howard et al., 2021), but the available evidence suggests that students on average spent more hours per day learning than during the first lockdown (Leahy et al., 2021), and that live online lessons were available more frequently and to more students than during the first lockdown (Nelson et al., 2021; Teacher Tapp, 2021). Despite improved remote teaching provision and specific efforts to mitigate inequalities, discrepancies in student experiences remained. Leahy et al. (2021, p.7) report that "students from middle-class families [were] nearly 1.5 times more likely to be spending more than five hours per day learning than students from working-class families" during the second lockdown, and students in more deprived schools remained far less likely

1 Similar decisions were made in Scotland, Wales and Northern Ireland, engendering similar concerns.

than students in the least deprived schools to have access to digital devices at home (Coleman, 2021; Nelson et al., 2021). This was presumed to be an important factor in accessing and engaging with remote provision: Nelson et al. found that "students in the most deprived schools were still less likely than students in the least deprived schools to attend the online lessons (59% and 78%, respectively), and return set work (47% and 67%, respectively)" (Nelson et al., 2021, cited by Howard et al., 2021, p.39). Although socio-economic factors were judged to be dominant, both recent reviews (Leahy et al., 2021; Howard et al., 2021) stress the difficulty of generalising about student experiences to any groups of students, due to extensive variation at multiple levels—regional, local, school and student.

In terms of the impact of these lockdown experiences on learning, some studies (Kuhfeld & Tarasawa 2020; Pensiero et al., 2020) drew on previous research of learning loss during the summer holidays to estimate the learning loss that had occurred during the lockdown period. The Pensiero study made estimates of learning loss for school students in the UK, with the caveat that actual figures would be highly dependent on the socio-economic group in which the student fell. Far less loss was predicted for the higher socio-economic groups: around 14 per cent of a standard deviation, with 28 per cent for the lower socio-economic groups. The Kuhfeld study from the United States of America (USA) reported extremely early (in April 2020) and suggested that, based on summer learning loss studies, students would return after lockdown with around 70 per cent of the expected learning in reading and around 50 per cent in mathematics. However, since this was based on summer learning loss research, it assumed that no learning at all took place during the time in lockdown, which may not have been the case. Another study, a joint project between the Education Endowment Foundation (EEF) and the Fischer Family Trust (Weidmann et al., 2021) related student performance on the standardised Progress in Reading and Language Assessment (PIRA) and Progress in Understanding Mathematics Assessment (PUMA) tests compared to a previous test taken pre-pandemic in April 2019; the authors found no measurable difference in pupil performance. In contrast, a separate study commissioned by the EEF (Rose et al., 2021, p.1) reported a large degree of "loss", amounting to a loss of two months' progress in both mathematics and reading.

Learning loss aside, another aspect concerning researchers, teachers, parents, and other stakeholders has been the wellbeing of students during this unprecedented time. Several studies have attempted to address this concern. A qualitative study by researchers at the University of York (Kim et al., 2020) highlighted anxieties that teachers have had about their students during lockdown, particularly those whose parents were key workers (in professions such as health and social care, food provision, the police force and other public services) and were left alone at home all day. Other concerns revolved around a perceived lack of engagement among students, work not being completed, and some groups not being responsive at all, and hard to reach. A short briefing note produced by the University College London (UCL) education unit (Moss et al., 2020) raised concerns about student wellbeing and welfare due to pressures on parents' reliance on food banks, long working hours or job loss. In addition, they mentioned issues with those families who were technologically disadvantaged,

who had no internet access and were hard to reach. A large study from the south of England (Mansfield et al., 2021) covering 19,000 school pupils across the age ranges concluded that lockdown had a greater negative impact on students in secondary schools compared with those from primary schools. Those from secondary schools scored lower for happiness, management of schoolwork and loneliness.

The story, therefore, is a mixed one. The evidence to date suggests that for some students, supported by both family and socio-economic advantages such as access to technology and a working space at home, the impact of lockdown on wellbeing and learning loss may have been fairly modest. For those who are technologically disadvantaged, or for whom family life has been more substantially impacted (e.g., via COVID-19 illness itself, parental career loss or reduced income, or parental overwork / risk in a key worker role), the situation is potentially far more bleak.

The present study

In the present study, we explored secondary school students' reflections on their lockdown learning experiences following the second national lockdown in England, which took place from early January 2021 until March 2021. We focused upon the extent and nature of their social interactions, which we hypothesised had changed markedly compared with during normal, pre-pandemic schooling. In normal, non-pandemic schooling, students interact with peers and teachers within lessons and school-directed activities (e.g., assemblies, school-based sports), but school attendance may involve numerous other social interactions besides these, such as interacting with non-teaching staff, or socialising with friends while travelling to and from school. As well as contributing to the nature of pedagogy and learning, social interactions affect interpersonal wellbeing. This is known to be an important component of overall wellbeing for school students; that is, of how they feel about themselves and their schools (McLellan & Steward, 2015). Key questions of interest related to whether there were differences in the patterns of social interactions of those students who learned mostly or entirely at home and those who spent time in school during lockdown (perhaps due to their parents' occupations or being identified as vulnerable).

Method

We devised and administered a short survey for secondary school students, with data collection taking place in May 2021. Respondents were recruited via a post on the Cambridge CEM[2] website asking for volunteer schools in England to take part in the research. Responding schools were sent letters of invitation explaining the research. Those agreeing to participate were provided with a link to the survey and were asked to allow their Year 10 to Year 13 students aged between 14

2 Cambridge CEM (Centre for Evaluation and Monitoring) is a leading provider of assessment and monitoring systems including baseline, attitudinal, diagnostic and entrance tests.

and 18 years to complete it.

The survey took approximately 10 minutes to complete. Students were asked to which of the four year groups (Year 10, Year 11, Year 12 or Year 13) they belonged. They were then asked:

- Where did your lessons take place during lockdown? (i) Mostly or entirely at school; (ii) Mixture of school and home; or (iii) Mostly or entirely at home.

The survey then suggested nine types of activity in which students might reasonably be expected to engage, either at home or at school. The first four of these were types of learning activities that occur in most lessons in English schools in "normal" times: whole class activities, working in small groups, working pairs, and working independently. They vary in terms of the number of people with whom students have the opportunity to interact. The fifth activity type, that of one-to-one conversations with teachers, also relates specifically to schooling (both at home and in the school building) but is not necessarily an activity within lessons: one-to-one conversations between teacher and student might take place (briefly) within a lesson, as a passing conversation in the school corridor, at the start or end of a lesson, or as a separately scheduled meeting. The remaining four activity types were: exploring new ideas and areas of interest, spending time with family, spending time with friends (this can be online), and relaxing / doing leisure activities alone. These activities were not related solely to schooling, although all but the final activity type could be interpreted by students to relate to both educational and non-educational activities. They were chosen in order to capture any potential changes in social interactions more generally. As noted previously, school attendance in pre-pandemic times occasioned social interaction in more than just classroom-based activities, and so to investigate the changes to social interaction associated with changes to schooling it was important not to limit the survey's scope to school-directed or solely educational activities.

For each of the nine activity types, students were invited to respond to three questions:

- How much time did you spend on the following activities during lockdown, compared with normal schooling outside lockdown?
- How helpful were these activities to you during lockdown?
- How much of these activities do you think you need over the coming months, compared with how much of them you had during lockdown?

In Question 2, students were not asked to distinguish between academic progress and wellbeing, but to make an overall judgement reflecting the extent to which each activity had been worthwhile. In Question 3, similarly, we expected respondents to think holistically. Responses were given using 5-point Likert scales. For Question 1, the response options ranged from "Much less time" to "Much more time" with an "Unsure" option. For Question 2, the response options ranged from "Really unhelpful" to "Really helpful" with an "Unsure/not applicable" option (abbreviated to "Unsure/NA" throughout). For Question 3, the response options ranged from "Much less" to "Much more" with an "Unsure" option. The survey did not allow respondents to skip questions.

Participants

Just over 600 students from eight different schools in England took part in the survey. Three schools, labelled A, B and C, provided the majority of the replies, each contributing over 100 responses. The remaining five schools (grouped as Schools R) had a total of 124 student responses among them. Responses were received from students across Years 10 to 13, with more responses from students in Years 10 and 12. The breakdown by school and year group is shown in Table 1. The sample was not nationally representative of England's school population, with independent school students over-represented.

Table 1: Students surveyed by school and year group.

	School type	Number of responses				
		Year 10	Year 11	Year 12	Year 13	Total
School A	State-maintained, single sex	86	47	41	11	185
School B	Independent	108	0	0	48	156
School C	Independent	52	12	48	27	139
Schools R	2 Independent schools; 1 Academy; 1 Free school; and 1 FE College	18	20	66	20	124
Total		264	79	155	106	604

Results and discussion

Locations of lessons

As mentioned previously, students were first asked where their lessons had taken place during lockdown. As would perhaps be expected, the distribution is heavily skewed towards students who spent their lockdown time at home. Eight of the 14 students in the sample who answered "Mostly or entirely at school" were in a single school. Nationally, the average rate of on-site school attendance for secondary school students during the early 2021 lockdown was 5 per cent [3]; the average rate that could be expected from the survey respondents (assuming near full-time attendance from 2.3 per cent and some attendance from a further 20 per cent) does not seem too dissimilar.

Table 2: Where did your lessons take place during lockdown (3 groups)?

Location	N responses	Percentage
Mostly or entirely at school	14	2.3%
Mixture of school and home	121	20.0%
Mostly or entirely at home	469	77.7%

3 https://explore-education-statistics.service.gov.uk/find-statistics/attendance-in-education-and-early-years-settings-during-the-coronavirus-covid-19-outbreak/2021-week-3

The focus of this investigation was on examining the differences between students' remote learning experiences during lockdown and their subsequent experiences upon their return to school. Given this focus and the very few responses from students whose lockdown lessons took place mostly or entirely in school, we decided that we would combine the first two rows of Table 2 and distinguish just two groups in our analyses: students whose lockdown learning took place mostly or entirely at home (77.7 per cent) and students whose lockdown learning was not mostly at home, that is, included time in school (22.3 per cent).

Overview of students' experiences of activity types

The overall profile of the 604 participating students' responses to the three questions about activity types is shown in Figure 1. The first column of bars gives an overall impression of how much time was spent on each activity type during lockdown, compared with during normal, pre-pandemic schooling. In line with our hypothesis, students reported that both the extent and nature of their social interactions changed markedly.

Strikingly, around two-thirds of students reported spending much more time working independently. This finding coheres with Bubb and Jones (2020) who reported increased autonomy among school students in Norway. Conversely, a similar proportion reported spending either less time or much less time working with others, in small groups or as a whole class. Together, these findings may suggest that for many students, there were large parts of the school day during which remote interactive teaching via Zoom[4] and other technologies did not take place. Lessons may have been provided in written format or pre-recorded, taking the form of lectures rather than interactive sessions. The biggest drop in frequency of schooling activity was for working in pairs. This is perhaps unsurprising, given the likely difficulties around arranging this during remote learning. It appears to have been replaced by independent working, rather than by whole class activities via Zoom, for example. Also, two-thirds of students reported spending less time or much less time in one-to-one conversations with teachers.

4 Zoom is a popular video teleconferencing software program used widely during the pandemic.

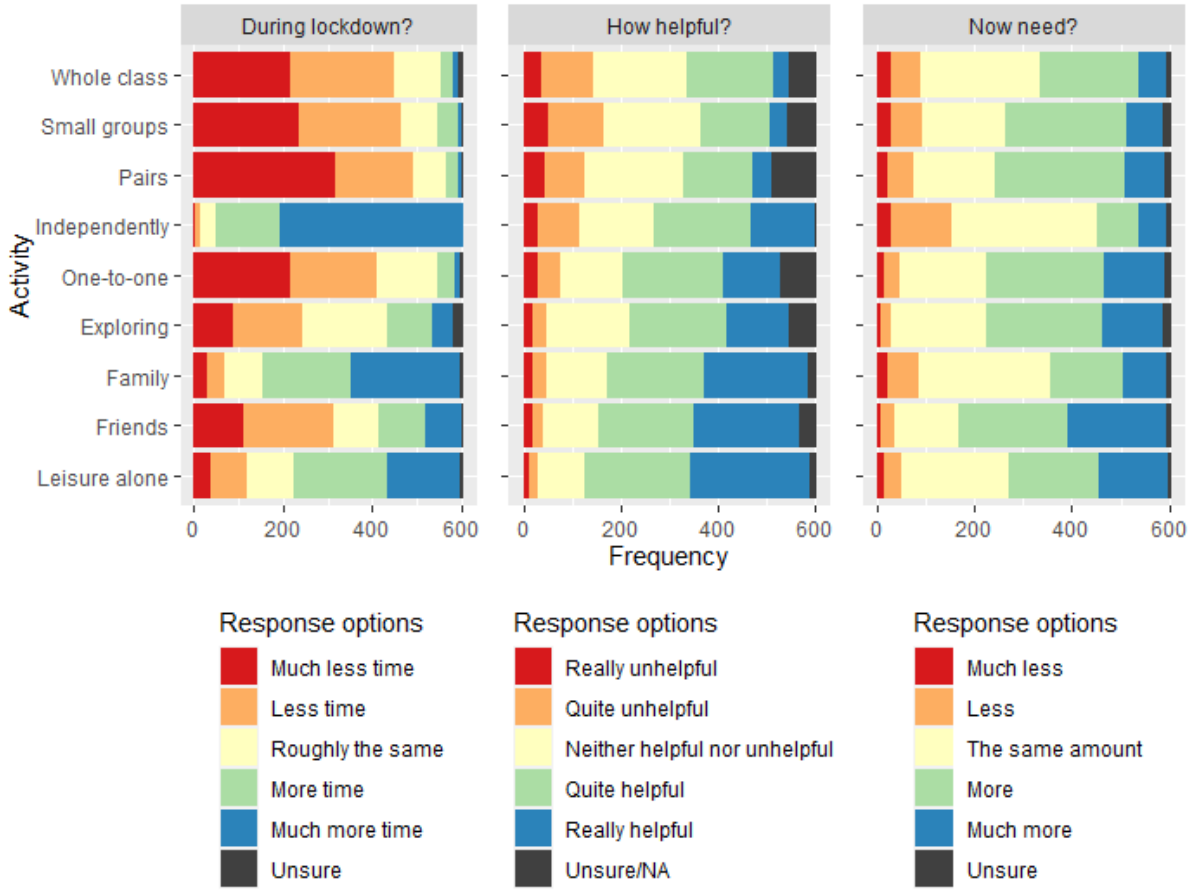

Figure 1: Visual representation of responses to the three main student activity questions.

The second column of Figure 2 indicates how helpful the students found these types of educational activities during lockdown. Perhaps surprisingly, over half of the students found working independently to be helpful or really helpful. Again, however, this is in line with Bubb and Jones's (2020) finding of enthusiasm during the pandemic for increased autonomy among Norwegian students. This can be taken as a positive finding, given how much this type of activity was reported to have increased. One-to-one conversations with teachers during lockdown were also reported to be helpful or really helpful by over half of the students. Since students reported spending less time in such conversations, it does not come as a surprise that the majority reported needing more or much more time for one-to-one conversations with teachers once back in school.

Interestingly, almost a sixth of students responded "Unsure/NA" to the question of how helpful they found working in pairs. Together with the large reported drop in the frequency of pair-work during lockdown, the high level of "Unsure/NA" responses could indicate that this type of interactive learning ceased completely for many of these students. Indeed, Figure 1 gives the general impression of an association between the proportion of "Unsure/NA" responses to each question on helpfulness (within column 2) and the change in frequency of the activity type to which it relates (column 1). This would suggest that many students selected this response because the activity was very much reduced or even ceased altogether during lockdown, rather than because it occurred but they were uncertain of

its value. The outcomes of an analysis of the "Unsure/NA" data supported this idea: the mean scores for the time spent on activity types were in almost all cases much lower for the "Unsure/NA" respondents than for the rest of the cohort who provided a measure-based answer.

The students were least positive about the helpfulness of working in small groups during lockdown; approximately a quarter of them reported that this activity was either unhelpful or really unhelpful. This could indicate that this activity type works least well in a remote format, possibly due to technological difficulties, the engagement levels of other students, or limits around how well teachers can monitor groups. However, without an indication of students' views on small group working in pre-pandemic schooling, firm conclusions cannot be drawn.

Looking beyond the types of learning activities that occur in most English classrooms in normal times, the first column of Figure 2 shows that during lockdown, over two-thirds of the students reported spending more time with their families. The second column indicates that most of these students found this to be helpful or really helpful.[5] Almost two-thirds of the students reported spending more time or much more time alone. This finding aligns with (Kim et al., 2020) who highlighted teachers' concerns that some of their students were left alone for long periods during lockdown. Around half of the students reported spending less time or much less time with friends, and approximately a third reported spending less time or much less time exploring new ideas and areas of interest. The latter reported decrease in time could be hypothesised to be due to reduced time with friends and / or the reduction in interactive learning activities described above. However, it was beyond the scope of the present study to test these hypotheses. It is apparent, however, that the reported increase in time spent working independently was not associated with students spending more time exploring new ideas and interests.

The third column of Figure 2 indicates what the students thought they needed over the coming months, compared with how much of the activities they had during lockdown. It can be seen that the students were broadly positive or neutral about all the activity types included in the survey. That is, there was an overall desire for more time on all activities, with no net negative responses to any activity type. The students' responses were least positive for working independently: over a quarter thought they needed less or much less of this activity and approximately half were neutral about it. Arguably it is surprising that so few students wanted less of it, given how much independent working they had experienced during lockdown. It is possible that many became used to it and discovered its value during that time, but exploring this possibility was outside the scope of our research.

5 While it is possible that the few students who reported spending less time with their families found this to be helpful, the number of such students is too small to alter this interpretation of the figure.

Students' experiences of activity types by year group

Table 1 showed that there were respondents from all four targeted year groups: over 250 were Year 10 students, around 80 were in Year 11, roughly another 150 were Year 12s, and just over 100 were Year 13s. Figure 2 shows students' responses broken down by year group, including the "Unsure" and "Unsure/NA" responses. As in Figure 1, the responses to each item are presented as a multicoloured bar. This time, however, each bar represents a year group rather than all respondents, and the coloured sections of each bar represent proportions rather than numbers of responses. This is to facilitate comparisons, since N varied across the year groups (see Table 1).

Overall, the figure shows a high level of consistency across year groups. Despite this broad similarity, there are some emergent patterns. In particular, the extent to which students reported much less, or less, time in one-to-one conversations with teachers decreased with increasing student year group, suggesting that older students received closer to "normal" levels of one-to-one conversations with teachers than their younger peers. The proportion of students reporting that they found one-to-one conversations with teachers helpful during lockdown also increased with age, with younger students more likely to respond "Unsure/NA" (a logical response for those not experiencing much or any of this activity) or that it was unhelpful. Figure 2 also shows some association between increasing student year group and wanting more time to explore new ideas, and wanting to spend more time with friends.

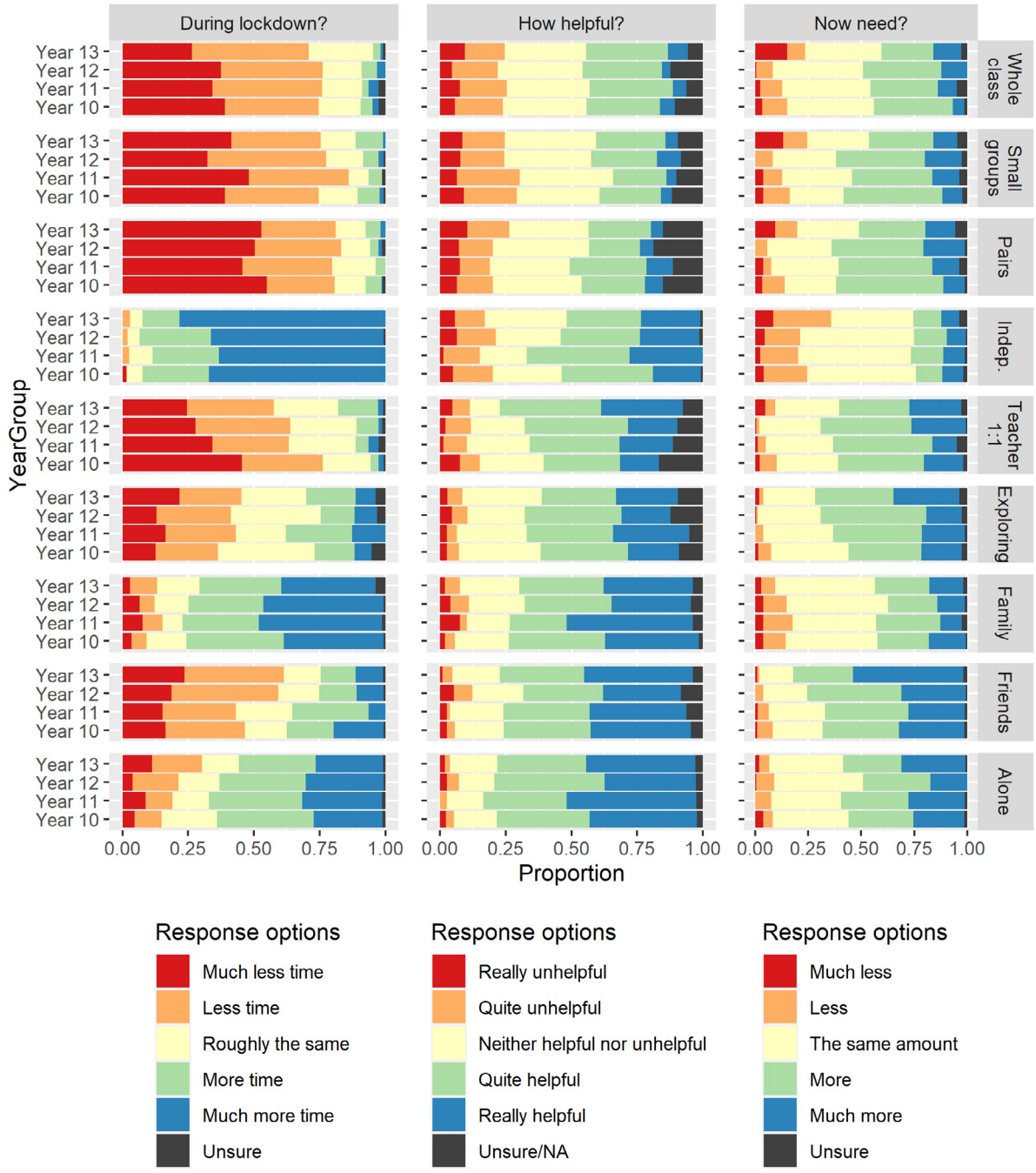

Figure 2: Responses to the three main student activity questions, by respondent year group.

To check for between-school variation, responses were also compared by school (Appendix 1). There was a high level of similarity across schools in the extent to which respondents found activities helpful, and the time they wanted to spend on activities once back at school. Responses about the time spent on independent working during lockdown varied very little between schools, but there were moderately large differences in the amount of time spent on one-to-one conversations with teachers and in small-group working.

Relationship between lockdown location and the types of activity students spent more or less time on during lockdown

Key questions of interest related to whether there were differences between those students who learned mostly or entirely at home and those who spent time in school during lockdown. Accordingly, Figure 3 shows students' responses to the question of how much more or less time they spent on each activity (Question 1), according to the location of their lockdown learning. Note that in Figure 3, proportions of respondents have been centred on zero to emphasise the reported decreases or increases in time spent on the activity types during lockdown. Bars shifted to the left of the zero line indicate a balance of decreasing time on that activity type, while bars shifted to the right indicate a balance of increasing time on that activity type.

Strikingly, Figure 3 shows that both groups of respondents showed similar patterns for the different activity types. That is, the broad patterns identified in Figure 1 held for both groups, a finding also supported by the similarity of means and standard deviations of responses from each group (see Table 3, Appendix 2).

As explained in the Method section, the first five activity types (Figure 3) relate to schooling and occur in most English classrooms in normal times. Students who attended school at least some of the time during lockdown reported spending similar amounts of time on each of these five activity types to those students who learned mostly or entirely from home. The general trend of spending less time in interactive learning activities within lessons (whole class, small groups, and pair-work) and more time working independently was common to both groups, as was spending less time in one-to-one conversations with teachers. It follows that the balance of activity types for those attending school during lockdown appears to have been quite different from what it had been prior to the pandemic. The nature of face-to-face schooling appears to have changed in the direction of remote schooling. This may be because teachers wanted to treat their students as fairly and consistently as possible, and / or did not have time to prepare pedagogical activities in multiple formats.

Nonetheless, some small but potentially relevant differences were observed. Respondents who had worked mostly at home gave a larger proportion of "Much less time" responses for pair-work, small group work, and one-to-one conversations with teachers. Such patterns may be expected due to the reduced social contact associated with being predominantly at home. Although the differences are relatively minor, the different groups of respondents did experience their lessons during lockdown a little differently.

The differences between the two groups were just as small for the four activity types that did not relate solely to schooling. That is, for spending time with friends and family, exploring new ideas, and spending time alone, the distributions of time were broadly similar for students who learned mostly or entirely at home and those who spent time in school during lockdown. Two small but unsurprising differences in the groups can be seen in Figure 3. Respondents who had worked mostly from home gave a larger proportion of "Much less time" responses for time with friends, and a larger proportion of "Much more time" responses for time with family.

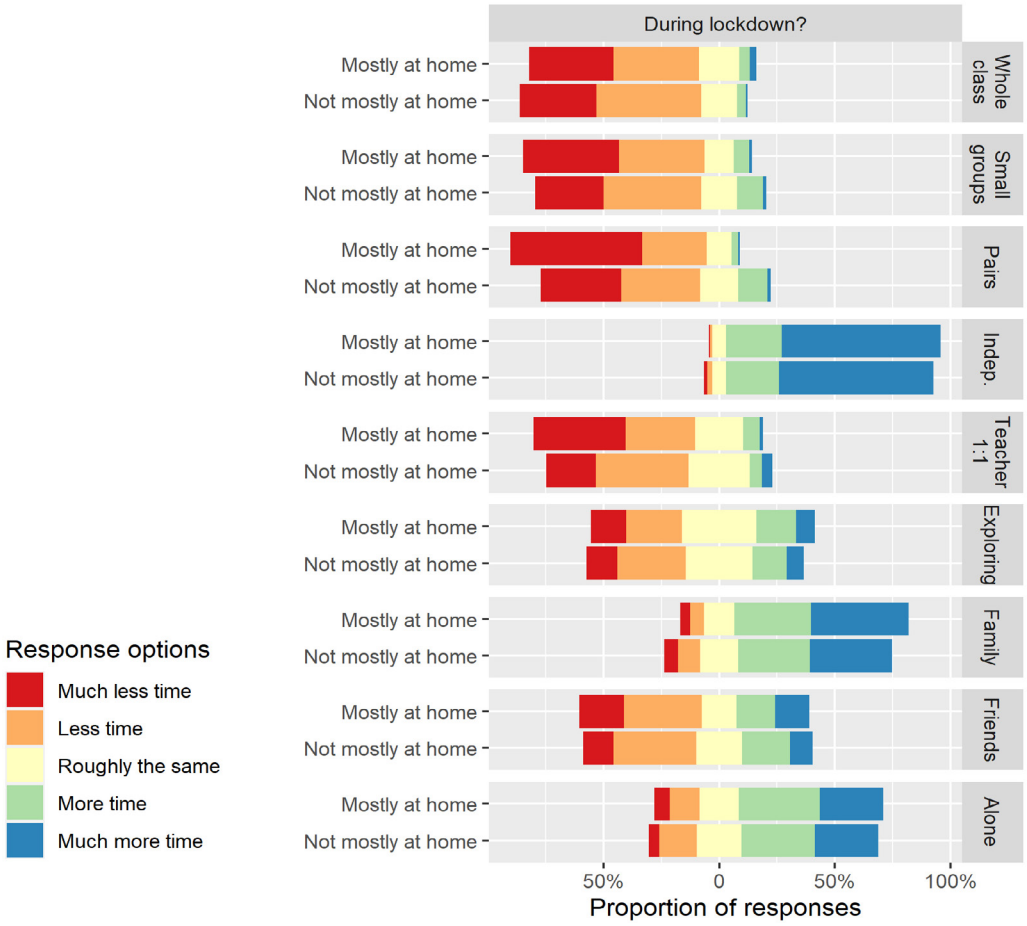

Figure 3: Responses to Question I ("How much time was spent on the activities during lockdown?"), broken down by the main location of learning during lockdown. Bars are expressed as proportions of respondents in each group, and are centred on zero so that bars to the left indicate a reduction in time spent, and bars to the right indicate an increase in time spent; the further left the bar lies, the greater the proportion of respondents that spent less time on that activity.

Relationship between lockdown location and which types of activity were found helpful

The analyses described above establish that there were only minor differences in the time spent on different activity types between the different groups of students. It is feasible, however, that even if broad patterns of time use were similar, students' experiences of those activity types may have differed depending on the location of lockdown learning. Accordingly, Figure 4 breaks down responses to Question 2 ("How helpful was the activity?") by location of learning. Note that interpretation of the figure is the same as for Figure 3, but as relatively more respondents answered "Unsure/NA" for this question, each bar does not sum to 1.

Figure 4 shows that the perceived helpfulness of activity types was similar between the groups, but some slightly larger differences were apparent than in Figure 3. Students who spent lockdown mostly at home gave much greater proportions of "Really helpful" responses to time spent with friends and time spent alone. This finding is most explicable for time spent with friends, as students spending most of their time at home would see friends less, making any social time much more valuable. The finding that time alone was also more helpful was less expected, and perhaps relates to having to share space with other family members. This highlights the multiple functions of time at school, providing social time alongside learning, but also opportunities for young people to have space and time to themselves. In terms of teaching activities, some differences were evident in small group work and pair-work, where students who were mostly at home showed greater proportions of negative responses. This could relate to the challenges of conducting such activities online, where technical limitations hinder "natural" group interaction, or to the simple fact that the activities were less frequently conducted under remote learning. Work in pairs again showed the biggest difference between group mean scores (Table 4), Appendix 2, while the only activity type to get a mean score lower than 3, indicating a net negative opinion, was working in small groups for those students who spent lockdown at home.

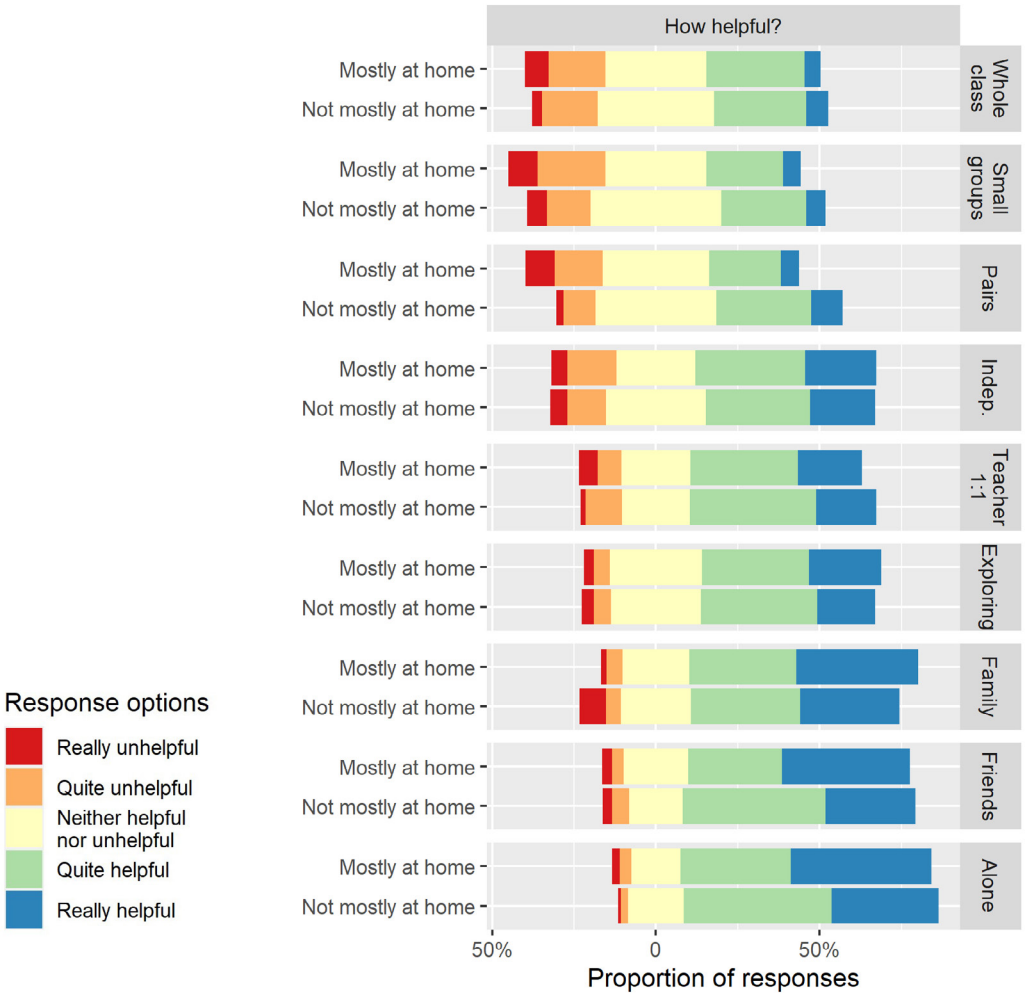

Figure 4: Responses to Question 2 ("How helpful were the different activities?"), broken down by the main location of learning during lockdown. Bars are expressed as proportions of respondents in each group and are centred on zero so that bars to the left indicate more unhelpful activities, and bars to the right indicate more helpful activities. Note that as the proportion of "Unsure/ NA" responses varied between activities and these responses were removed, bars are of different lengths.

Relationship between lockdown location and which types of activity students wanted more of afterwards

The final question in the survey related to which activities students wanted more of, once schools had fully reopened. Figure 5 breaks down responses to Question 3 into the two groups considered so far. Interestingly, although this analysis of the previous questions identified some differences between the groups, this plot highlights just how similar the two groups were in respect of what activities they wanted more of. As noted in the whole-sample analysis, there was an overall desire for more time on all activities except independent working, with neither group showing an overall negative response to any activity.

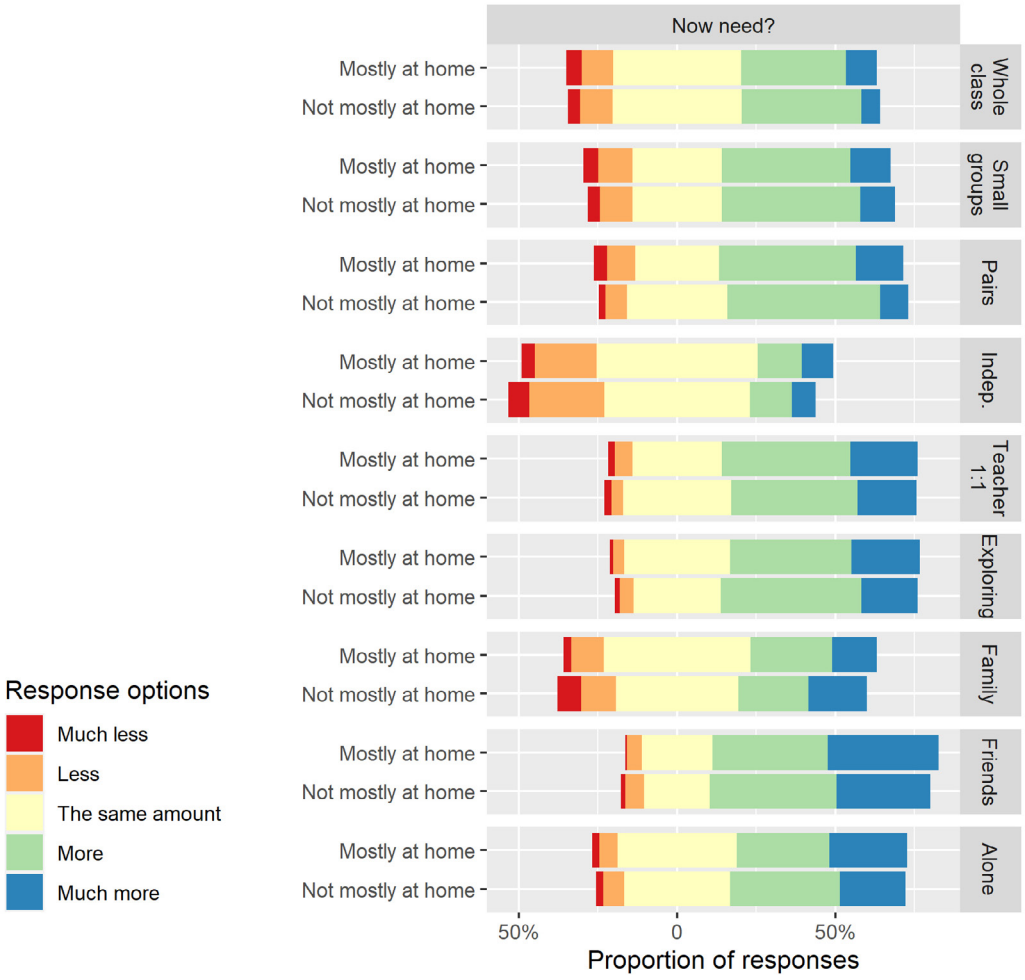

Figure 5: Responses to Question 3 ("How much time should be spent on the activity types in coming months?"), broken down by the main location of learning during lockdown. Bars are expressed as proportions of respondents in each group, and are centred on zero so that bars to the left indicate activity types where less time should be spent, and bars to the right indicate activity types where more time should be spent.

Intriguingly, one of the more evident differences comes from "time with family", where students who spent some time at school gave a slightly greater proportion of "Much more time" responses, although this is also offset by a greater proportion

of "Much less time" responses. Indeed, when mean values are compared (see Table 5, Appendix 2), the values are identical for six of the nine activities, and for the three showing any difference, the difference is only 0.1 or 0.2.

The lack of difference between the groups is, in itself, an interesting finding. It was anticipated that the different experiences of students under lockdown would lead to differing needs going forward. However, these findings imply that the students effectively wanted the same things once schools reopened, regardless of where they spent lockdown. This may, therefore, show that students predominantly wanted a return to "normality" following the challenges of lockdown, rather than missing specific aspects of their school experience.

Limitations

When evaluating the results and discussion above, the study's main limitation should be borne in mind. Although the overall data set was of a reasonable size and was collected from eight different schools, over three-quarters of the respondents to our survey attended just three schools. Thus, the sample was not nationally representative of England's school population. The survey was conducted at a time when teachers were extremely busy collating their students' performance data to provide them with GCSE and A Level grades. Although this is likely to have influenced many schools' decision to participate, delaying the study to a less busy time would have had a negative impact on the validity of the data collected, since students' memories of lockdown would probably have faded.

A further limitation of the data relates to the number of student respondents who participated in face-to-face schooling during lockdown. Nationally, the rate of on-site attendance for secondary school students was low (5 per cent), and our respondents included very few whose lockdown learning took place mostly or entirely in school, although a larger group reported a mix of learning from home and in school. Whether students who attended face-to-face schooling during lockdown were slightly under- or over-represented in our data, the conclusions that can be drawn are limited by the fact that the absolute number of responses from such students was small.

General discussion and conclusions

The results of this study indicate that the 600 students who took part experienced a marked decrease in the extent and type of their social interactions during England's lockdown of early 2021. While we cannot say how typical these changes were or what happened nationally, we were unable to identify a compelling reason to assume that they were substantially different. For example, if substantial reductions in pair-work and small group work were experienced in the well-resourced schools in our study, then it seems likely that many schools in the state-maintained sector found it similarly difficult to continue these interactive activities during lockdown.

Reductions of this kind are of great concern given that the pedagogical benefits of peer tutoring are very well established. Peer tutoring includes a range of approaches within pair-work and small group work, in which students provide

each other with explicit teaching support (Education Endowment Foundation, 2021). Pre-COVID-19, its introduction in schools had been found to have an average positive effect equivalent to approximately five additional months' progress, with low-attaining students and those with special educational needs making the biggest gains (Education Endowment Foundation, 2021). Opportunities of this kind appear to have reduced in 2020 and 2021, even among vulnerable children who attended school during lockdown and potentially need it most.

Just as importantly, our findings of reported reductions in the extent and range of interactive activities, both during and outside of schooling, offer a powerful explanatory mechanism for the decreases in the wellbeing of young people that have been reported since the pandemic struck (for example, Office for National Statistics, 2020). As explained previously, interpersonal wellbeing is known to be an important component of overall wellbeing for school students (McLellan & Steward, 2015). We would suggest that it is an important topic for further pandemic-related research.

Finally, perhaps the most positive finding of our study was a strong general trend for students wanting more of all the activity types explored, except independent learning (although even for independent learning, students seemed to think post-lockdown levels were about right, and over half found it helpful during lockdown). Since this finding could be an effect of school type, it would be interesting to research this further among a larger, nationally representative sample of students. Could there really be an increased desire and respect for education as a result of the lockdown, among students as well as those parents who had to home-school?

Ethical considerations

The research was conducted in full accordance with the principles stated in the research team's institutional *Research Ethics Guidance* document. This included obtaining the necessary consent for students' participation (from parents / guardians, or from students themselves if aged 16+) and protecting their privacy.

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Appendix 1: Students' experiences of activity types by school

Figure 6 shows students' responses broken down by school. As in Figure 2, the coloured sections of each bar represent proportions rather than numbers of responses in order to facilitate comparisons, since N varied across schools (Table 1).

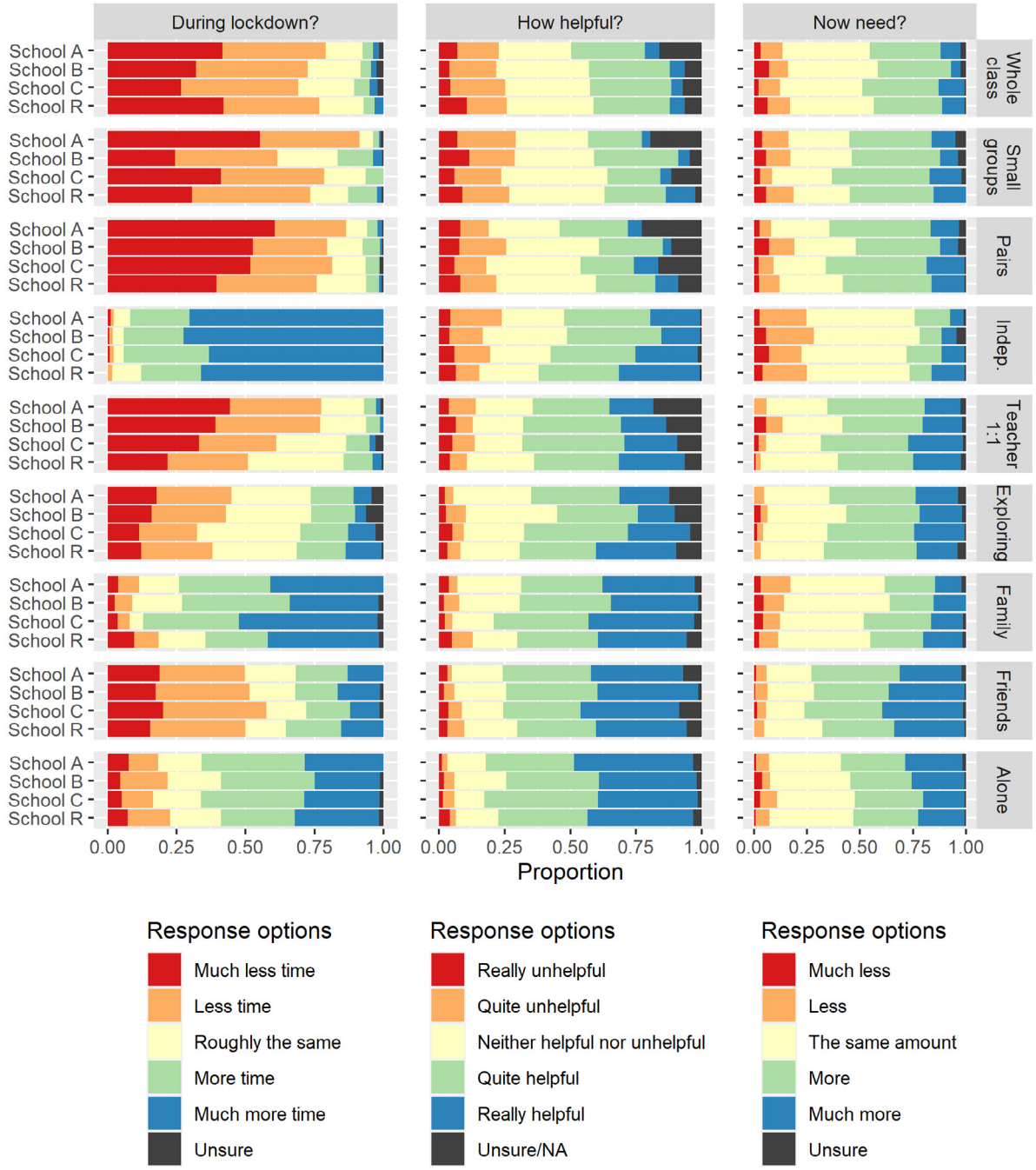

Figure 6: Responses to the three main student activity questions, by school.

Appendix 2: Responses summarised by lockdown location

To further support comparisons between students whose lockdown lessons took place mostly or entirely at home, and those who spent at least some time in school, Tables 3–5 show the mean and standard deviation of scores from each group, for each activity type.

Table 3: Mean responses to Question 1 (how much time was spent on the activities during lockdown compared with normal schooling outside lockdown). Values are derived from scoring 1 for much less time, 2 for less time, 3 for similar, 4 for more time, and 5 for much more time. Hence, a mean less than 3 indicates less time overall on that activity, and a mean greater than 3 indicates more time overall.

Activity	Not mostly at home		Mostly or entirely at home	
	Mean	SD	Mean	SD
Whole class activities	1.9	0.8	2.0	1.0
Working in small groups	2.1	1.0	1.9	1.0
Working in pairs	2.1	1.1	1.6	0.8
Working independently	4.5	0.8	4.6	0.7
One-to-one conversations with teachers	2.3	1.0	2.0	1.0
Exploring ideas/ interests	2.7	1.1	2.8	1.2
Time with family	3.8	1.2	4.0	1.1
Time with friends	2.8	1.2	2.7	1.3
Leisure activities alone	3.6	1.2	3.6	1.2

Table 4: Mean responses to Question 2 (how helpful were the different activity types). Values are derived from scoring 1 for really unhelpful, 2 for unhelpful, 3 for neither helpful nor unhelpful, 4 for helpful, and 5 for really helpful. Hence, a mean less than 3 indicates an unhelpful activity overall, and a mean greater than 3 indicates a helpful activity overall.

Activity	Not mostly at home		Mostly or entirely at home	
	Mean	SD	Mean	SD
Whole class activities	3.2	0.9	3.1	1.0

Working in small groups	3.1	1.0	2.9	1.1
Working in pairs	3.4	0.9	3.0	1.1
Working independently	3.5	1.1	3.5	1.1
One-to-one conversations with teachers	3.7	1.0	3.6	1.1
Exploring ideas/ interests	3.7	1.0	3.7	1.0
Time with family	3.8	1.2	4.0	1.0
Time with friends	3.9	1.0	4.0	1.0
Leisure activities alone	4.1	0.8	4.1	1.0

Table 5: Mean responses to Question 3 (how much time should be spent on the activity types in coming months). Values are derived from scoring 1 for much less time, 2 for less time, 3 for a similar amount of time, 4 for more time, and 5 for much more time. Hence, a mean less than 3 indicates students wanted to spend less time doing that activity type, and a mean greater than 3 indicates students wanted to spend more time doing that activity type.

Activity	Not mostly at home		Mostly or entirely at home	
	Mean	SD	Mean	SD
Whole class activities	3.3	0.9	3.3	1.0
Working in small groups	3.5	1.0	3.5	1.0
Working in pairs	3.6	0.8	3.6	1.0
Working independently	2.9	1.0	3.1	1.0
One-to-one conversations with teachers	3.7	0.9	3.7	0.9
Exploring ideas/ interests	3.8	0.9	3.8	0.9
Time with family	3.3	1.1	3.4	0.9
Time with friends	3.9	0.9	4.0	0.9
Leisure activities alone	3.7	1.0	3.7	1.0